c.—THERAPEUTICS OF THE NERVOUS SYSTEM AND MIND.

CHLORAL.—Dr. Geo. H. Savage, *Jour. of Mental Sci.*, April, discredits the valuation that has been placed upon chloral by many of the profession. He thinks it often misused, and that the weight of evidence is against it. He says: "I shall consider chloral, first as a possible cause of insanity, and next as a remedy.

"As a cause, I have seen its constant use for one or two years produce melancholia, associated with great prostration, loss of flesh and strength, a sallow, worn aspect, great irritability and nervousness, with strongly suicidal tendencies. I have the experience of several personal friends, men who were working hard with their brains, and who suffered from sleeplessness. These found chloral a boon at first, but by continuing its use they lost physical health, and the sleeplessness became more unbearable.

"It is rather difficult to explain this more active sleeplessness, but, doubtless, many of my readers know the less distressing stages of it. The chloral-taker often on going to bed, after a hard day's work, feels not only unable to sleep, but actively, restlessly wakeful, so that he is unable to remain more than a minute in one posture. There is no special or pleasing flow of thought, no equal brain activity, but often a feeling of depression, and a dreadful impulse to injure oneself without any object or cause of woe.

"This impulse was described rather as a feeling like the one impelling people to throw themselves from heights.

"In assuming that chloral was a cause of insanity, I must admit that often it was only one cause. The chloral-taker was sleepless from brain exhaustion, or brain irritation, from over-work or over-stimulation, and in some cases had insane inheritance; but this is true of many other causes. A shock or a blow may only produce insanity under similar circumstances. I have seen one case of insanity follow the suicidal taking of an enormous dose (two ounces) by a person used to excess of stimulants and the habitual use of chloral. This case became slowly weak-minded, and did not recover. In this case there was doubt expressed by at least one authority on the part played by chloral, as there were added other serious causes of trouble; but the fact remains that till the large and almost fatal dose was taken, marked insanity was absent.

"In several other cases the prolonged use of increasing doses of chloral seemed slowly to develop ill health and melancholia, accompanied by refusal to take food. In one the husband took a fatal dose, and his wife, who was also a chloral-taker, became insane.

"In another, an elderly woman exhibited, in an exaggerated form, the dread and agitation common to those using the drug, and had to be fed by the stomach-pump. She slowly lost strength in mind and body, and was discharged uncured.

"Though these are in no way peculiar in their form of insanity, I am convinced the cause was chloral. Of course, I do not believe that patients are made insane in asylums by the use of the drug, as the outside world has supposed, but I am convinced that many cases of acute insanity are injuriously affected, and, in some instances, allowed to die through the use of chloral. A large proportion of the cases of puerperal insanity that are now admitted into Bethlehem have passed through a course of chloral treatment; which means that they have been dosed into quietness, till they have refused food. Such cases take longer in recovering, and are more troublesome to treat, from their physical exhaustion and their refusing food.

"Having, so far, only expressed my dislike to the drug, or, in other words, spoken of its abuse, I would pass on to say what I believe to be its uses.

"It has been used in—1st, sleeplessness; 2d, in various forms of insanity; 3d, in several stages of epilepsy. In reference to the first, I have seen sleep produced by chloral, when the wakefulness was not due to pain; but if this sleeplessness were the initial stage of insanity, I have not seen the attack warded off by the sleep. In a few cases, where over-work or anxiety is affecting the health, a single dose of twenty-five grains at bedtime is of service, but I would rarely give it regularly.

"For simple sleeplessness in the brain-worker, who has little or no bodily exercise, sleep may be induced, and work got through that could not have been done without some sleep; but, in my experience, this is done by drawing on the capital of energy, and, if pursued, will end disastrously.

"In a few sleepless persons, chloral seems to act uniformly well, and does not require increasing doses, and does not affect the appetite or general functions. In such cases it may be of great service.

"I believe, however, that simple sleeplessness is much better treated by other general measures before chloral is tried.

"2d. In some cases of maniacal excitement, the patients are controlled and made manageable. According to some authorities, the sleep induced in some of the most violent of such cases saves them from death by exhaustion. This seems probable; but in practice I find stimulants and abundant light food act just as well.

"In some cases of recurrent mania with great violence the drug has been given in large and repeated doses, gradually increasing till at length we have reached two drachms every four hours, and no beneficial result has followed. In melancholia one does not get good results by either occasional or regular administration.

"In general paralysis I have not dared to give the drug any long trial, as I felt that I was running the danger of removing one stone from the tottering structure.

"In cases of insanity following blows, shocks, and the like, I believe excitement is produced much like that produced by alcohol in cases of injury to the head.

"In acute insanity with intemperance, a few cases were relieved by chloral.

"In speaking above of the treatment, I refer to my experience of chloral alone. In some future papers I may speak of its combination with other drugs.

"In the third group I place epileptics; and with these I have greater faith but less experience.

"I know of no good results following the use of the drug in simple epilepsy; but in patients who have furor associated with the fits, the benefit is very great and very certain.

"I have frequently seen a case that without chloral was dangerously maniacal, for several days sleep quietly, after thirty grains of chloral, and wake up sane, having had an epileptic fit, but no furor. Every fit that was not followed by a dose of chloral, was followed by a fit of mania.

"I have now expressed my belief, which may be summed up to be that chloral may produce physical ill-health, hypochondriasis and insanity. It may relieve epileptic furor, but cannot cure epilepsy; it may produce sleep in some cases with advantage, but more commonly disadvantageously; it may be used as restraint rather than as treatment in violent cases."

CODEIA.—Dr. Robert Saundby (*Brit. Med. Jour.*, April 12,) recommends codeia as a sedative against frequent coughing in patients in whom for various reasons opium and morphia are contra-indicated. He claims that in phthisis, it allays cough without deranging digestion, and that it also agrees with gouty individuals in whom morphia and opium are not tolerated. Its value in diabetes is of course fully recognized. He prescribes it in doses up to one grain in syrup of tolu.

RESULTS OF TREATMENT OF THE INSANE.—At the meeting of the Medical and Chirurgical Faculty of Maryland, April 10, Dr. J. S. Conrad, chairman of the Section on Psychology, read a paper on the Treatment of the Insane, the following abstract of which we take from the report of the proceedings in the *Maryland Medical Journal* for May.

Dr. Conrad began his paper by remarking that the modern expensive and palatial hospitals for the insane have been the outcome of asylum reports, showing a very large percentage of recoveries, ranging from 60 to 90 and, in one case, 100 per cent. Whilst compared with these exhibits the almshouse care and treatment was shown to realize only seven per cent. of recoveries. The data upon which such reputed success has been claimed have been shown by indisputable evidence to be fallacious and untruthful, and that the error of the asylum reports consists in counting the cases recovered and not the *persons*. Thus Dr. Pliny Earle, superintendent of a Massachusetts asylum, has enumerated instances of this method of computing the ratio of recoveries.

One man was discharged recovered seven times in nine years, and afterwards committed suicide; another was discharged 14 times, another 26 times, and again a woman was admitted 59 times, and discharged cured, in 29 years, and finally died insane. These examples are cited to show the fallacy of asylum reports.

Dr. Conrad remarked that the ratio of recoveries had become the standard of judgment of an institution; as a consequence such a rivalry in the ambition of superintendents to show the greatest number of recoveries. This was the result of the reaction from the old almshouse treatment, or no treatment at all.

The reports of these large percentages of cures have gradually dwindled down for several years past under the severe criticism of Dr. Earle, and the actual results are illustrated by the yearly accumulation of chronic cases. This reaction is still continuing as the pruning knife of truth is applied.

Thus Dr. Skae, inspector of the insane for the colony of New Zealand, in a report shows the results of the almshouse and "wild beast method" of treatment performed in New Zealand, in contrast with the English, Irish and Scotch county and borough asylums. Notwithstanding the deplorable manner in which the insane are treated in this colony, Dr. Skae says the ratio of recoveries to admissions is 13 per cent. higher than in the Scotch and Irish, and 23 per cent. higher than in England; their death-rate 4.4 per cent., being 4.5 per cent. lower than in England.

Dr. Conrad from the report of Dr. Skae was led to make comparisons of our own system, and to that end reviews the reports of the City Almshouse, Spring Grove Asylum, and Mount Hope Retreat for the Insane. The comparative results of the institutions are equally surprising as that reported by Dr. Skae. The following table of results of figures taken from the last published reports of these respective institutions as prepared by Dr. Conrad are here given:

	BAY VIEW.	SPRING GROVE.	MT. HOPE.
Cost of maintenance, per capita	$69.37	$214	Not given.
Number of Insane treated	266	434	445
" " admitted	86	153	131
No. of Insane recovered and improved	77	94	72
Per cent. of same on admission	per cent. 89.5	61.	41.
" " " the whole	" 28.9	21.4	16.2
Whole number of deaths	12	34	29
Per cent. of deaths	4.5	7.8	6.5

These results in favor of the Bay View Asylum (or Almshouse), are more remarkable when it is noted that the physicians of this institution state in their report (page 44) "that we are only permitted to receive or to retain idiots, imbeciles, epileptics, and chronics ; all acute and curable cases are sent to Spring Grove and other special institutions."

Dr. Conrad next shows the sanitary condition of these institutions, and the methods of treatment employed. He presents the report of Dr. Chancelor, on public charities, reformatories, prisons and almshouses, 1877, to illustrate the surroundings and poor comforts of the City Almshouse in contrast with the elegance and beauty of Spring Grove Asylum. In conclusion, Dr. Conrad remarks, "but for the report of Dr. Skae showing a similar comparative picture in New Zealand, he would be unable to account for such statistics except upon the ground that the report from Bay View was incorrect."

SECTION OF THE TRIGEMINUS FOR THE CURE OF TIC DOULOUREUX.—Dr. F. S. Dennis, (*N. Y. Med. Jour.*, June,) after reviewing some twenty odd cases of resection of the superior maxillary nerve which he has collected, sums up as follows:

1. The high operation upon the superior maxillary nerve for the cure of neuralgia characterized by pain (loci dolentes, *points douloureux*), having its maximum of intensity at the infra-orbital foramen, in the course of the malar branch, and sometimes, though rarely, in the alveolar dental, superior labial, and palatine points, is a better operation than the lower one, inasmuch as the preceding cases show that the former, as a secondary measure, has cured or brought relief in nearly every case in which the latter has failed to do so.

2. The operation is justifiable, as the record shows no case in which death has occurred as an effect of the operation, nor one in which the symptoms have been aggravated.

3. Relief, if only temporary, is a result which justifies the high operation for neuralgia as much as it does the one for the removal of malignant tumors, which, as a rule, invariably recur subsequently to their extirpation by the knife.

4. Want of success is due to failure as regards a correct diagnosis, not only of the cause of the pain, but also to failure as regards the site of the disease. If central, the diagnosis fails to determine whether the centres are primarily or secondarily involved, or, if peripheral, whether the recurrent fibres are or are not implicated.

5. Failure will be the rule rather than the exception, unless care is taken to distinguish those cases in which neuralgia is due to central lesions from those in which the cause lies in the periphery.

6. If the lesion is situated in the terminal nerve plexuses, polyneurotomy, or the resection of several nerves, will be more likely to remove pain than mononeurotomy, or the resection of a single nerve.

7. Mononeurotomy should be reserved for those cases in which the irritant involves the trunk of a nerve near its origin.

8. The prognosis will be the most favorable where lesions involving the plexuses or the nerve centres can be excluded.

9. The principal indication for the employment of this bold but safe operation is found in the obstinacy and persistency of pain, notwithstanding the trial of all milder measures.

Finally, when the case is a desperate one and as a *dernier ressort*, every conscientious and skillful surgeon should not fail to make a trial of an operation which facts prove to be as good in theory as it is successful in practice.

In conclusion, it may be said that resection of the superior maxillary nerve, together with Meckel's ganglion, for the alleviation, and in most cases the cure, of one of the most dreadful and formidable diseases to which human flesh is heir, is one of the greatest triumphs of surgery. A careful analysis of the table will show that the two cases belonging to Wood and one to Schuppert remained free from pain at least two years; and the interesting and unique autopsy held in the case of Mike Doyle, one of the severest cases on record, has thrown much light upon the subject of accuracy in diagnosis, upon the pathological changes involved, and upon a right estimate of untold value of this most daring operation. It is also a most significant fact that out of the twenty-one cases that have been collected from all the literature upon this subject more than half have been performed by American surgeons. It is certainly an operation of which American surgery can justly be proud; and if the success which has attended these twenty-one cases will only induce surgeons to investigate impartially the merits of this operation, it will inaugurate a new era and establish a reform in the surgical treatment of this most desperate malady.

METALLOSCOPY.—The following is the *resumé* of a thesis recently sustained at the Frederick William University, Berlin, by A. S. Adler, a Californian student there, as given by M. Blanchard in the *Progrès Médical*, May 3:

The author first gives succinctly the state of the question of metalloscopy, then, in a following chapter he relates his own experiments, and the whole is summed up in a final chapter that I translate *verbatim*:

"In cases of hysterical hemianæsthesia, a simple excitation, such, for example as that from a mustard poultice, if kept up long enough, produces under any circumstances an increase of sensibility of the part affected. This increase may sometimes have only the effect to recall the lost sensibility; but it may even provoke such a hyperæsthesia as to make simple contact painful. This restoration often coincides with a diminution of sensibility at a point symmetrical to the part excited, but this result is not a constant one. With the use of metals less constant results are obtained in this order of observations, than with mustard plasters. Of four metals tested on a hemianæsthetic patient, only copper caused any augmentation of sensibility in the part to which it was applied; an increase sometimes coincident, sometimes not, with a corresponding diminution in a symmetrical portion of the body.

"In healthy individuals, the application of metals gives very inconstant results; sometimes they increase sensibility of the point to which they are applied; at other times, on the contrary, they decrease it; and again in others they produce no effect whatever. We cannot therefore speak of any certain influence of metals exerted on the sensibility of the healthy individual.

"I have, on the other hand, seen regularly and surely, that a simple excitation (sinapism) increases the sensibility of the point of application and diminishes that of a symmetrical point on the other side of the body. Hence it follows that, when the metals exert an influence on the sensibility of hysterical patients, this may be explained very probably, in an altogether different way than by supposing that they have a specific action on sensibility.

"The important result of my investigations is the fact that, in the healthy individual, a simple excitation increases the sensibility of the side not excited (healthy) and diminishes that of the side excited (diseased). It is beyond a doubt that this phenomenon appertains to the functions discovered by Adamkiewicz, and described by him under the name of 'bilateral functions.' If in one class of these functions (the secretion of sweat) we have the synergic action of centres of organs symmetrically situated, the sensibility of the body represents on the other hand a bilateral function in which the ganglia of symmetrical organs are antagonistic to each other in the exercise of their functions."

THE THERAPEUTIC VALUE OF CROTON CHLORAL.—In a very interesting paper read before the Ulster Medical Society, Dr. Riddell (*Dublin Medical Journal*, April, 1879) reports his experience of the great therapeutical value of croton (butyl) chloral. He mentions first a case of severe paroxysmal headache ineffectually treated for many years by all the great guns of the *Pharmacopœia*, but cured by five grains of butyl-wine and glycerine, with a little acid and syrup of orange to cover the flavor. The patient continues the five-grain doses at night, and now enjoys better health than she has done for years. Since that case, Dr. Riddell says, he has used it largely—sometimes failing, sometimes relieving—till, by keeping an account of all his cases, it began to be clear which were most benefited by the drug. Since then, the number of cases relieved (some permanently) has increased. These cases are: headache in females arising from mental distress; those cases of headache frequent at the menopause—in fact, all those called neuralgic except a few arising from internal mischief, are benefited, and in many instances cured. In that distressing species of neuralgia called tic douloureux, he has found it in many cases acting like a charm. Of course, he does not include any arising from cranial or inter-cranial causes. He has tried it in neuralgia of the ovaries, but no good resulted. In insomnia, it is not so reliable as the hydrate; but in some cases, where the loss of, or inability to, sleep is accompanied by a weak or fatty heart, it is to be preferred, as it has no weakening effect on the central organ of the circulation. In one case of delirium tremens, where the circulation was very feeble, the combination of croton chloral with digitalis had a wonderful effect, and it seemed as if the drugs could be given together in much smaller doses to produce the same results than singly. In this he pushed it from ten to thirty grains every three hours, with drachm and two-drachm doses of the infusion of digitalis. In pain arising from caries of the teeth, he has found it useless in most cases, and in all inferior to Richardson's "tinctura gelsemini;" but in one case, of a nervous young lady, by giving her two ten-grain doses, he was able to extract a tooth next to painless to her great satisfaction. In these cases it is in affections of those parts supplied by the fifth pair of nerves that it is of most use; but, to be of service, the drug must be given in far larger doses than prescribed in the *Pharmacopœia* for adults, five grains three or four times daily, gradually increasing if required; if stimulants be wanted, dissolve it in rectified spirit; if not, dissolve it in glycerine. In all cases complicated with hæmorrhoids, give glycerine. If anæmia exists, combine it with iron, or what he believes better, arsenic; then gradually lessen the chloral. In all cases he has found it better to give it in solution than in powder or pill. Dr. Riddell mentions also severe pain with photophobia and blepharospasm after injury, in which atropia failed, but ten grains of butyl-chloral repeated in an hour gave complete relief ; and a case of acute painful facial carbuncle, in which the effect of ten-grain doses every three hours was "simply marvelous," the disease going through its subsequent stages almost without the patient knowing anything of the matter from the sense of feeling. This remedy is probably less used in practice than its remarkable anodyne powers deserve.—*Brit. Med. Jour.*, May 3.

THEVETIN.—The following are the conclusions arrived at from an experimental investigation of the glucoside of *Thevetia iccotli* (Yoyote, yellow narcissus), a Mexican plant, by David Cerna, M. D., and published in the *Philadelphia Medical Times*, May 24 and June 7. The experiments were performed on dogs, cats, mice, rabbits, guinea pigs and frogs :

I. Thevetin is a very powerful poison, the minimum fatal dose in the common frog (Rana esculenta) being $\frac{1}{60}$ of a centigramme.

II. Thevetin produces death by asphyxia and by cardiac paralysis, more frequently by the former.

III. Thevetin is an irritant when locally applied to the skin, giving rise to a peculiar burning sensation.

IV. The diminution in the number of heart pulsations produced by thevetin is due to its action on the cardiac muscles. The poison seems to have no action on the pneumogastrics.

V. The arterial pressure is increased by an action of the drug on the heart itself, *i. e.*, by a stimulating action on the intra-cardiac ganglia.

VI. The primary acceleration in the number of respirations produced by thevetin is due to excitation of the centre in the medulla oblongata, the subsequent decrease and the final cessation of the respiratory movements being due to an action on the functional nerves, and also, probably, to an action on the muscles of respiration particularly.

VII. The convulsions produced by thevetin are cerebral.

VIII. The paralysis produced by the poison is spinal.

IX. As sensation is lost before voluntary movements, and as the nerves remain intact after death, it is evident that the abolition of reflex activity is of spinal origin, and is dependent upon an action of the drug on the sensory tract of the cord.

X. Thevetin increases intestinal peristalsis.

XI. Like most other drugs, thevetin lowers the temperature.

XII. When locally applied, thevetin produces contraction of the pupils, due to peripheral irritation.

XIII. In thevetin-poisoning the salivary is the only secretion markedly increased.

THE ACTION OF ANÆSTHETICS.—The *British Medical Journal*, June 21, contains the third report on the action of anæsthetics made to the Scientific Grants Committee of the British Medical Association, by Drs. Coats, Ramsay, and McKendrick. They conclude their reports as follows :

1. Both chloroform and ethidene administered to animals have a decided effect in reducing the blood-pressure, while ether has no appreciable effect of this kind.

2. Chloroform reduces the pressure much more rapidly and to a greater extent than ethidene.

3. Chloroform has sometimes an unexpected and apparently capricious effect on the heart's action, the pressure being reduced with great rapidity almost to *nil*, while the pulsations are greatly retarded or even stopped.

The occurrence of these sudden and unlooked-for effects on the heart's action seems to be a source of serious danger, all the more that in two instances they occurred more than a minute after chloroform had ceased to be administered and after the recovery of the blood-pressure.

4. Ethidene reduces the blood-pressure by regular gradations, and not, so far as observed, by sudden and unexpected depressions.

5. Chloroform may cause death in dogs by primarily paralyzing either the heart or the respiration. The variations in this respect seem to depend to some extent on individual peculiarities of the animals: in some, the cardiac centres are more readily affected, in others, the respiratory. But peculiarities in the condition of the same animal very probably have some effect in determining the vulnerability of these two centres respectively, and they may both fail simultaneously.

6. In most cases, respiration stops before the heart's action; but there was one instance in which respiration continued when the heart had stopped, and only failed a considerable number of seconds after the heart had resumed.

7. The use of artificial respiration was very effective in restoring animals in danger of dying from the influence of chloroform. In one instance its prolonged use produced recovery, even when the heart had ceased beating for a considerable time.

8. Under the use of ethidene, there was on no single occasion an absolute cessation either of the heart's action or of respiration, although they were sometimes very much reduced.

It can, therefore, be said that, though not free from danger on the side of the heart and respiration, this agent is in a very high degree safer than chloroform.

9. These results confirm and amplify those stated in a previous report, to the effect that ethidene does not compromise the heart as does chloroform. By the method of experimentation then employed, the effect on the blood-pressure could not be determined; and altogether the results here obtained are more exact and unequivocal.

It may be added that since the last report, ethidene has been given to a number of patients of all ages, with results which may be described as satisfactory.

Given freely at first, it produced anæsthesia as rapidly as chloroform, and the effect could readily be kept up by comparatively small subsequent doses. The only drawback is that in some cases it produced vomiting; but it has not been determined that it does so more frequently than chloroform, over which it has the further advantage of producing less excitement and being more agreeable to the patients.

Isobutyl chloride was given to three patients, but it produced considerable excitement, and proved an imperfect anæsthetic.

In concluding this report, the committee would express the belief that, so far as purely physiological tests go, ethidene has proved itself as efficient an anæsthetic as chloroform, and a much safer one. It is not asserted that this agent ought at once to replace chloroform in practice; but it is believed that a very strong case has been made out for an extensive trial of it. It is impossible for the committee, having numerous other engagements, to give the agent that extended trial in actual practice which is desirable; and they would ask those who are engaged in practice to use it in their cases, and to report the results they may have obtained. ,

It appears that ethidene was first employed as an anæsthetic by Dr. Snow. He administered it in fifteen cases, with good results (see *Snow on Chloroform*, etc., last paper, published in 1858). In 1870 it was used by Liebreich and Langenbeck in Berlin (*Berlin klin. Wochenschrift*, Nos. 31 and 33 1870, p. 401). In 1871, two papers appeared: one by Sauer, in the *Pharm. Centralblatt*, vol. XIV., p. 140; and the other by Steffen, in *Deutsche Klinik*, No. 44, p. 398. Sauer mentions one case of death in a patient suffering from heart disease. In thirty-three cases, two vomited, and two suffered from nausea and headache. In 1872, Steffen publishes another paper in the same journal (p. 358), in which he gives details regarding twenty cases; and he states that the results were satisfactory. (See, also, *Jahrb. der Medicin*, 1870, 1871 and 1872, where abstracts are given.)

Snow states that the difficulty in obtaining ethidene pure may prevent its general use. That difficulty is now removed; and there is little doubt that, if required, ethidene may be made in a state of purity and at a moderate cost.

THE following are a few of the recently-published papers on the Therapeutics of the Nervous System and Mind :

WARNER, Jaborandi in the Treatment of Puerperal Albuminuria and Convulsions, *N. Y. Med. Rec.*, July 12.—COGHILL, Nitrite of Amyl in Chloral Poisoning, *Brit. Med. Jour.*, June 28.—GAUSTER, The Cure of General Paralysis, *Jahrbücher f. Psychiatrie*, I., 1879.—SAVAGE, Hyoscyamin and its Uses, *Jour. of Mental Science*, July.—MATTISON, A New Method of Treatment of Opium Inebriety, *Quart. Jour. of Inebriety*, June.—BERGER, The Electric Treatment of Convulsive Tic and Chorea Minor, *Centralbl. f. Nervenheilk.*, May 15.—HAMMOND, The Non-Asylum Treatment of the Insane, *Neurol. Contributions*, I.